Debugging Gigi with Pix

# You need the following to get started

* Install Pix for Windows from the [Microsoft website](https://devblogs.microsoft.com/pix/download/)
  + Select the “latest main version” and download the x64 link
* [Enable “Developer Mode”](https://learn.microsoft.com/en-us/windows/apps/get-started/enable-your-device-for-development) in Windows
* [“Allow access to the CPU performance counters for all users”](https://developer.nvidia.com/nvidia-development-tools-solutions-ERR_NVGPUCTRPERM-permission-issue-performance-counters) in the NVIDIA Control Panel.

# Follows the steps below to debug a shader in Gigi with Pix

## Gigi

* Start Gigi
* Enable “Compile Shaders for Debugging” (Main Menu -> Settings -> Compile Shaders for Debugging)
* Load your Gigi file
* Take a “Pix Capture” (Main Menu -> Pix Capture)
  + If Pix for Windows is installed, this action will automatically open it. The files file path for the Pix capture is also written to the Gigi log.

## Pix for Windows

* Start the analysis using the play button in the main menu.
* Select “Pipeline” tab.
* Gigi puts performance markers in the capture file matching the node names of the shader file.
* Select a draw call (e.g. boxblur -> CS: BlurH -> Dispatch for the boxblur technique)
* This opens the preview in the lower half of the UI.
  + Select the render target you want to investigate (e.g. UAV Texture 0: PingPongTexture : Output for the boxblur technique)
* Right-click on a pixel and select the option “Debug Pixel”
  + This opens the shader in the debug panel where you can step through the code as used by other IDEs.

# Reference

* The Unity documentation includes a [helpful guide for debugging shaders with PIX](https://docs.unity3d.com/Manual/DebuggingShadersWithPIX.html) that provides some general insights.